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Science and Technology for Tomorrow's Air and Space Force

Success Story

INFORMATION DIRECTORATE HELPS DEVELOP THE WAVE OF THE FUTURE FOR EXPLOITATION OF WEATHER PREDICTION DATA

As any warfighter can tell you, weather can be your best friend or an absolute mission breaker. To address the weather issue, the Information Directorate helped develop a standardized Web-based interface between warfighter applications and a weather information service, using Internet hardware and software technologies. Weather Access for Visualization and Exploitation (WAVE) allows warfighters to incorporate weather forecasts directly within their computer-assisted, decision-making processes.

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Accomplishment

Decision-quality weather data is available, but not readily accessible, to decision-support applications. The process involves manual input, mental ingestion, translation, and exploitation, and it is cumbersome, slow, and error-prone.

Directorate personnel, working with the Command and Control Battlelab, Northrop Grumman Information Technology, and the Defense Information Systems Agency-chartered Joint Naval Meteorology and Oceanography Command (METOC) Data Standardization Working Group, facilitated the adoption of a Department of Defense Joint METOC Broker Language. This application programming interface (API) allows warfighter applications to automatically obtain numerical weather prediction data, produced and stored within the military weather weapon system.

WAVE is exploiting the new eXtensible Markup Language Web service technology to provide warfighter applications with access to numerical weather prediction data available within the new Joint Weather Impacts System Environmental DataCube (EDC). The EDC is a by-product of the directorate's Joint Environment Exploitation Segment program.

Warfighter applications requiring numerical weather forecast data can request data from WAVE. WAVE parses the request, retrieves the desired data from the EDC, packages the results, and sends the reply to the requesting application.

Background

The JMDSWG fully accepted the attributes and object structure of the API that the WAVE program designed. Prior to WAVE, there were no definitive plans to design or define a common API. Now, however, the Department of Defense is well on its way toward using a standard. As a result of implementing the standard and the attendant Web-service technologies, warfighters can visualize and exploit weather prediction data within their decision-support applications.

Information
Support to the Warfighter

Additional information

To receive more information about this or other activities in the Air Force Research Laboratory, contact TECH CONNECT, AFRL/XPTC, (800) 203-6451 and you will be directed to the appropriate laboratory expert. (03-IF-08)